



Good Roads
Petroleum For Road Making.

California has discovered a new way of making good roads. It is in the use of hot, crude petroleum as a paving material.

Part of road making is probably more important than any one of man's accomplishments. It is only in recent years that the settlements, outside of a few of the advantages of good roads, and to encourage their building through liberal appropriations of public money.

State, county and township. Sooner was such work begun there arose serious questions in localities as to what material best for the local production of roads.

Where stone was cheap and plentiful, naturally became the accepted making material, but even in sections a stone road is not always the most satisfactory. Earth, made of sand or gravel, which is good cementing material, such proper admixtures of loam, clay or cinders, make roads much smoother and more pleasant to drive over while so likely to be unpleasant from the roughness of the stone.

Such roads are much cheaper to build, for hardly a locality can be found which does not contain some bed of fair road-making material. In many sections the natural materials are all that is needed to make good roads for fair weather use. Such roads, however, are sure to suffer under the effects of winter rains and frosts and summer droughts, and break up badly.

Such was the situation in Fresno when the working of California's new road law made petroleum cheap and suggested its use on the roads. The probably came from the use of petroleum refuse on railroad tracks to keep down dust. Using the petroleum is a new idea.

The hot oil cements the sand, loam, gravel and makes the road both dustless and waterproof. It makes the roadbed material pack under a heavy use and its qualities improve as the doses of oil are repeated.

Reports from San Bernardino County say that 180 barrels of oil a year are used per mile of road, and that at \$1.10 a barrel the oil is found cheaper than sprinkling with water in keeping down the dust, while all its other advantages are, as it were, crown in. —New York Journal.

Building Good Roads.

State Engineer Bond is the executive head of the good roads movement in New York. It involves a vast amount of hard work, but he is interested in it personally to such a degree that the labor of traveling about the state and inspecting the roads under improvement or of drawing up the plans for improving the roads here in Albany is done with pleasure and zest.

"The good road, the trolley, the automobile, the bicycle and the locomotive," he said a few days ago, "will destroy the anarchist party, for they will like the workingman out of the city to the country and give him a pleasant home. Those blocks of tenement houses in New York, we shall all hope, will in time be superseded by the manufactory and other business concerns, and the underground road, the trolley, automobiles, the good roads and the bicycles will enable the workingman to live five miles in the country."

"Will you expend the \$420,000 appropriated by the Legislature this year for good roads?" Mr. Bond was asked.

"Yes, every penny of it. I have just been down to Newburg to have a chat with Governor Odell concerning the improvement of the roads and other subjects relative to the work of this department. The Road Improvement Company, organized by Edward H. Harriman, which has the contract for improving the roads of Orange County, has already expended \$14,000 on road improvement machinery. We are building and improving dirt road for fourteen miles west of Newburg. I told the Governor it was an experiment. I don't know whether such a road will last. Where we can put gravel on such a road. The cost of the Orange County road will not be over \$1500 a mile."

A Poorly Matched Team.
In their zeal for automobile progress or for good roads ardent automobilists and good roads advocates, as we all should be, are constantly coupling two movements of very unequal natural speed. The tortoise and the hare are harnessed under the same yoke, in the hope that the good roads will be built for slow progress, may be somewhat by its more rapid progress. The improvement of the automobile has advanced absolutely and the automobile user will not subside. It is obvious, it seems to me, that the automobile and the good roads are like their inventors—they won't work.

endowed with a natural energy to overcome all obstacles by its own inherent vitality, must needs suffer under the drag of a running mate which is destined to crawl slowly over prejudice, financial obstructions and official dilatoriness.—Automobile Topics.

A Broadening Influence.
Man is a social being. Sociability is broadening and should be cultivated. The city and the country have, unfortunately for both, only a bowing acquaintance. Lack of social intercourse, which leaves room for the growth of prejudice and jealousy, is largely responsible for this unwholesome cramped condition. Bad roads are largely responsible for the slight acquaintance that is maintained between the city and the country and for the absence of the sociability that would naturally follow a closer acquaintance.

EVOLUTION OF THE CENSUS.

Taken in the Middle Ages For the Purpose of Taxation.

The term "census" had its origin in Rome, and was applied to one group of the censor's many and varied functions, says a writer in the Paris Messenger. The Roman census was chiefly concerned with fiscal matters, and we may suppose that the enumerators were not too effectively welcomed by the inhabitants. In the middle ages the census meant neither more nor less than a tax, and the final, formal, material, and efficient cause of every numbering of a people was the desire of its castle-clad government for money or the actual sinews of war.

Under the absolute monarchies which appeared in Europe after the decline and fall of the feudal system, the tendency to centralization for administrative purposes prepared the way for statistical inquiries, into the numbers of the inhabitants of particular districts. The necessity of such stock taking was first clearly pointed out by Adam Smith, but it was not till long after his death that the first census of Great Britain—it did not extend to Ireland—was carried out. A census bill, which passed the Lower House in 1753, was thrown out by the Lords as being "profane and subversive of liberty." Accordingly, up to 1801, the number of inhabitants of the British Islands was as much a matter of guesswork as the population of China is to-day, and, as invariably happens in such cases, the result of the enumeration was a great disappointment to all the statistical prophets.

The progress of the census methods since the first year of the last century may be illustrated by the development of the occupational returns. In 1801 there were but three divisions—those employed in agriculture, those engaged in trade or manufacture and those engaged in neither. In the next two censuses no material change in this respect was made, but in 1831 the overseers of parishes were required to give details respecting the occupations of males over 20. In the census of 1841, an enumeration most facilitated by the uniform system of registration of births, marriages, and deaths which came into force in 1837, the enumerators were instructed to enter each person's description of his own occupation.

An interesting feature of the census of 1851 was an attempt to supply the ecclesiastical and educational statistics of the country, but no effort was made to elaborate the occupation returns. The census of 1861 was also, to a certain degree, experimental. In 1871 the first imperial census was taken—and the census paper of that date—an interesting article, by the way, could be written on the series of eleven—is obviously the great grandfather of the present form.

Types of Havana "Buses."

The "buses" of Havana are odd-looking wagonettes, painted most incongruously, some of them showing admixtures of green, blue, white, brown and yellow, with now and then a strip of red. The Cubans seem partial to a pea-green and bright blue, often associating these colors and yellow. There are buses which accommodate but four passengers and others carrying six, eight and twelve. The smaller ones are drawn by a single mule, the larger by two or three ponies, some of them by four, depending upon their routes and distances. The buses are old, dingy and dilapidated. The drivers are an unclean-looking lot, the occupants usually of the commoner classes. A lady or well-dressed man is rarely seen in one of them.

A Vast Gum Region.

There is a vast territory in Northern Maine from which gum comes, a region larger than the State of Massachusetts, covered by deep spruce forest, broken only by lakes and streams. Out of this region in the spring come many men bearing their packs of gum on their backs. Some have devoted their whole time for the winter to gathering gum. Others have combined with this work trapping fur-bearing animals. A number of guides, who in the fishing and hunting season traverse the woods with parties of sportsmen, devote their winters to gathering gum.

Some inventors are like their inventions—they won't work.

FARM TOPICS

A Safety Pig Trough.
The pig will get into the trough when one wishes to clean it out, and he will put his head under the spout when one wishes to pour in the milk.



EXCELLENT DEVICE FOR A PIG TROUGH.

The device herewith shows how the pig can be kept away from the trough until everything is in readiness for him to eat. The swinging door is closed until the trough has been cleaned and the milk or other food poured in. Then it is raised and all the usual bother obviated. Have a ring on the rope to avoid the necessity of having to tie it whenever the swinging door is raised.—New England Homestead.

Treating Seed Oats For Smut.

After running through the fanning mill as for speed, the oats were spread on the barn floor about three inches deep, twelve bushels at a time for convenience in handling. I then mixed formalin with water in the ratio of one ounce of the drug to one gallon of water for every six bushels of oats. With a garden watering can I sprinkled the mixture evenly over the oats, then with a hand rake stirred thoroughly, and with a scoop piled into a snug, elongated heap, two and a half or three feet high through the centre. The sacks that had contained the oats were then turned and shaken and then spread over the heap. Over the portion not covered a light blanket was thrown. Forty-eight hours after, commencing at one end with a scoop, I stirred and turned the heap into another like the first, and covered as before, and left it two days more. When I found the moisture applied so thoroughly diffused through and absorbed by the dry grain as to be no longer perceptible, the oats were then sacked ready for use when wanted.

Running a little short of treated seed, and to test the value of the treatment, I finished the field with a bushel and a half of seed from the same bin, untreated. That strip was very badly damaged by smut, and seemed so weakened and retarded in growth that the difference was plainly noticeable from a considerable distance after the oats were in head. The crop from treated seed was entirely free from smut. I think this treatment so much easier of application than the hot water treatment as to very much more than offset the very trifling cost of the formalin.—P. F. Nye, in American Agriculturist.

The Care of Harness.

It is beyond doubt that a harness properly taken care of will last nearly twice as long as one that is poorly taken care of. The most essential thing in the care of harness is to keep it clean and well oiled, and the second thing is to have straps, reins, buckles, etc., repaired or replaced with new ones, immediately, when they are noticed to be out of order or unsafe for wear.

It bespeaks very poorly for a man's business management of his private affairs, to see him have the harness on his horses tied together with pieces of rope, twine, wire, etc. Give the harness a good oiling at least once a year, and if soiled it should also be cleaned by washing. Soak it in a tub of soft water in which has been dissolved some emulsion made by dissolving a bar of soap in one quart of water and boiling, adding to it one pint of kerosene oil and stirring, beating and churning it until a creamy emulsion is formed. Take the harness apart in order to get it well cleaned. Let it soak until all soil can be readily rubbed off with a stiff brush.

Allow harness to dry slowly in a shady place so the leather will not become stiff and hard. When the leather seems to be thoroughly dry on the outside but yields readily to the pressure of the hand apply some good harness oil thoroughly to every part. After a couple of hours if there be any superfluous oil that did not penetrate the leather, wipe it off with a soft rag or it will become sticky and accumulate dust. As an example of what good care of harness will do, I will say that we have on our farm, still in fairly good condition a set of harness and leather flynets that has been in use every season for sixteen to nineteen years. As a "dollar saved is a dollar made," it becomes equally necessary to look well after the things we have as to try to obtain the most profit from the produce we raise on our farms.—L. O. F., in the Epitome.

Many Etruscan tombs have been found in Central Italy during the last two years.

RULES AGAINST HAZING.

Regulations Promulgated For the West Point Cadets.

The War Department has promulgated the regulations prohibiting hazing at the West Point Military Academy, as prepared and submitted by Colonel Mills, the Superintendent of the institution. The regulations are more stringent than any heretofore issued, and in them hazing is thus defined:

"Any cadet who shall strike, lay hands upon, treat with violence, disturb in his room or tent or offer bodily harm to a new cadet or candidate with intent to punish, injure, annoy, molest or harass the same, or who shall with the same intent invite, order, compel or permit a new cadet or candidate to sweep his room or tent, make his bed, bring water, clean his arms, equipment or accoutrements or perform any other menial service for him, or to assume any constrained position or to engage in any form of physical exercise, or who shall with the same intent, invite, order or compel any new cadet or candidate to eat or drink any article of food or to take into his mouth any article whatever, or to do for him anything incompatible with the position of a cadet and gentleman, or any cadet whose duty it is to enforce camp, barrack or mess regulations who shall permit any new cadet or candidate to eat or drink any article of food or to take into his mouth any article whatever in violation of said regulations shall be summarily dismissed from the Military Academy."

Hazing also includes any other treatment of a "harassing, tyrannical, abusive, shameful, insulting or humiliating character." Dismissal is the penalty of violation of these regulations. The practice of duel or personal combat is also prohibited, and the principals and other persons involved or any cadet abusing or condemning another for declining to accept a challenge will be dismissed.

The regulations are considered very sweeping in their character and such as to cover without question all acts of hazing committed by the cadets.—Washington Times.

Getting Biograph Pictures.

"Br-r-r-ring! Br-r-r-ring! Br-r-r-ring!" a quick connection with the desk 'phone of the city manager, and in another moment it is known at biograph headquarters that a fierce fire and a series of explosions have devastated a downtown business block, and that the loss of life is estimated at 300. The camera operator and his assistants receive word; there is a scamper for fire badges, and two minutes later the biograph outfit, which takes 2000 pictures a minute, is handed into the emergency wagon, which has been waiting all day for just such a call.

The city manager arrives on the scene to arrange with fire chiefs and police sergeants for a favorable position for the picture-taking apparatus. The camera is set up on its tripod, the film-boxes attached, the lens focussed, and the operator begins turning the crank. Three minutes, five minutes—the shutter snaps and every movement of the exciting scene is faithfully recorded. The film, which may be from 160 to 300 feet in length, is then carried to the biograph factory, where it is developed in its entirety on reels that carry it through developing solutions, dried by power-fans, and a "positive" is printed from it by electric light. The process takes from two to four hours.

That night the catastrophe of the afternoon, projected on a screen, seems almost as real to the theatregoer as the actual occurrence was to those who witnessed it.—Everybody's Magazine.

Stammering.

C. Biaggi holds that stammering is a degeneration of speech, resulting from an arrest of development in the powers of co-ordination of the movements essential to speech. Children who stammer usually exhibit other signs of nervous taint. The remedy consists in gradual, patient training of the individual muscular movements producing speech. By degrees they can be co-ordinated and combined. At the same time the pupil should be taught to control the bodily contortions and facial grimaces which are so apt to accompany their efforts to speak. In this systematic method of exercise, comparable to the patient and constantly repeated efforts necessary for the learning of the scales and exercises on the piano, the child will gradually acquire control of his speech instrument and become perfect in its technique.—La Tribuna Medica.

Tea Growing in the United States.

As soon as American inventive genius and the adaptation of machinery render it practicable to perform by machinery such share of the labor now done by hand in China, Japan and Ceylon as to render competition with them practicable, the United States may produce all of its own tea, and much more. The tests have been conducted for several years and through several trying winters, and show that the plants thrive in our climate, while the quality of the tea and the quantity per acre compare favorably with the highest average in the Orient.—Everybody's Magazine.



CHILDREN'S LEISURE HOUR

An Invitation.

"What do you say?" said the Work To Be Done.
"Shall we start bravely together,
Up with the earliest peep of the sun,
Singing, whatever the weather?
Come, little busy-folk, what do you say?
Let's begin fairly together to-day."

"Shall we keep step with a laugh and a song,
All through the runaway morning?
And when the noontime comes speeding along,
Whistling his chorus of warning,
Then," said the Work To Be Done, "let us see
Who has kept up in the hurry with me."

"Hark, in the midst of the long afternoon,
When you're a little bit weary,
How all the meadows keep sweetly in tune,
Toiling and prattling and cheery.
What do you say?" said the Work To Be Done,
"Shall we be comrades till setting of sun?"
—Youth's Companion.

Pony and Rattlesnake.

A California farmer, who has three small children, owns a pony which is their constant companion. They have ridden him, rolled over him, fed him and have come to consider him as one of the family. When the children went on an expedition and did not want to ride, the pony went along as if he had been a pet dog. The San Francisco Chronicle tells the following story of the pony's presence of mind:

One day the three children went on a nutting expedition, and while they gathered the nuts the pony grazed near by. Suddenly, almost beneath the feet of the nut gatherers, there was an ominous whirr, and they saw with horror a huge rattlesnake coiled ready to strike.

The children huddled together, too much frightened to move, but as the deadly head went back there was a quick trample of hoofs, a rush through the bushes and the pony appeared.

With his four little sharp hoofs brought together he shot up into the air, landed squarely on the snake's coil, and was off again before the wicked head could strike.

The interruption had released the frightened children from the charm, and they ran a short distance away, and stopped to witness the contest. The rattler was wounded, but full of fight, and coiled again, and again the pony landed on him and got away safely. This time the snake's body was nearly severed in two places, and the snake was conquered. The pony walked around it, and apparently satisfied, gave a cheerful whinny and returned to his grazing.

A Friendly Field-Mouse.

Many stories have been told in the past tending to show that wild animals, when in trouble, will display surprising confidence in man—in fact, will often seek his assistance when sore beset. The writer, when a boy on a farm in Minnesota, had an experience with a field mouse which prettily illustrates this trait in wild creatures. It was stacking time, and the men were all busy in the fields lifting the shocks of cured grain and stacking them in hive-shaped stacks in the barnyard. The writer, a barefoot boy at that time, had been following the wagons in the field all the morning in a vain endeavor to capture some field mice to take home as pets. He had seen a number of the drab little creatures with their short tails, but had failed to lay his hands upon any of them, owing to the thick stubble and the nimbleness of the mice. At last, as a particularly large shock was lifted, a broken nest was disclosed, and the youthful mouser was put upon the qui vive by the slender squeaks of seven or eight hairless little, belags that were so young as not to have opened their eyes as yet. The mother disappeared with a whisk, whereupon the young hunter sat down in a critical attitude beside the nest and began to examine his find. He had already put one of the young mice in his trouser's pocket when the mother reappeared out of the stubble beside the nest. The boy held his breath and awaited developments. Much to his surprise, the mouse-mother, after carefully examining the ruined nest, entered his pocket, which, as he sat, opened very near to the nest. She seemed to come to the conclusion very quickly that her lost little one had found a very good home, and in about two minutes had transferred the remainder of her offspring from the nest to the pocket, carrying them one at a time in her mouth.

The writer has had many varied experiences with wild animals, but none of them impressed him so strongly as the episode of the mouse-mother in the wheat stubble.—Clyde Hayden, in Birds and Nature.

Mrs. Nebb—"I am going to an observation party this afternoon, dear." Husband—"An observation party? What sort of a party is that?" Mrs. Nebb—"Mrs. Quilzer's next door neighbor is moving, and Mrs. Quilzer has invited a few friends to watch through the windows and see what they have."—Boston Traveller.